No. 8100010

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Leo Linden Schraeder

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF eighteen YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. UNITED STATES SEED OF THIS VARIETY (1) SHALL BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED AND (2) SHALL CONFORM TO THE NUMBER OF GENERATIONS SPECIFIED BY THE OWNER OF THE RIGHTS. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

COMMON WHEAT

'Tut'

In Testimony Whereof, *I have hereunto set my hand and caused the seal of the* Plant Variety Protection Office *to be affixed at the City of* Washington *this* 14th *day of* January *in the year of our Lord one thousand nine hundred and* eighty-two.

Attest:

Commissioner
Plant Variety Protection Office
Grain Division
Agricultural Marketing Service

Secretary of Agriculture

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
LIVESTOCK, POULTRY, GRAIN & SEED DIVISION

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

INSTRUCTIONS: *See Reverse.*

FORM APPROVED
OMB NO. 40-R3822

No certificate for plant variety protection may be issued unless a completed application form has been received (5 U.S.C. 553).

1a. TEMPORARY DESIGNATION OF VARIETY	1b. VARIETY NAME	FOR OFFICIAL USE ONLY
L.S.3	TUT	PV NUMBER 8100010
2. KIND NAME: Wheat Common	3. GENUS AND SPECIES NAME: Triticum Aestivum	FILING DATE 10/29/80 / TIME 11:30 (A.M.) (P.M.)
4. FAMILY NAME (BOTANICAL): Graminae	5. DATE OF DETERMINATION: June 1975	FEE RECEIVED $ 500.00 / $ 250.00 / DATE 10/29/80 / 10/30/81

6. NAME OF APPLICANT(S)	7. ADDRESS *(Street and No. or R.F.D. No., City, State, and ZIP Code)*	8. TELEPHONE AREA CODE AND NUMBER
Leo Linden Schraeder	R.2-Box 69, Timken, Kansas 67582	913 355 2391

9. IF THE NAMED APPLICANT IS NOT A PERSON, FORM OF ORGANIZATION: *(Corporation, partnership, association, etc.)*	10. IF INCORPORATED, GIVE STATE AND DATE OF INCORPORATION	11. DATE OF INCORPORATION

12. NAME AND MAILING ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS:

13. **CHECK BOX BELOW FOR EACH ATTACHMENT SUBMITTED:**

- [X] 13A. Exhibit A, Origin and Breeding History of the Variety *(See Section 52 of the Plant Variety Protection Act.)*
- [X] 13B. Exhibit B, Novelty Statement.
- [X] 13C. Exhibit C, Objective Description of the Variety *(Request form from Plant Variety Protection Office.)*
- [X] 13D. Exhibit D, Additional Description of the Variety. 10/22/80

14a. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? *(See Section 83(a). (If "Yes," answer 14B and 14C below.)* [X] YES [ ] NO

14b. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS?	14c. IF "YES," TO 14B, HOW MANY GENERATIONS OF PRODUCTION BEYOND BREEDER SEED?
[X] YES [ ] NO	[X] FOUNDATION [X] REGISTERED [X] CERTIFIED

15a. DID THE APPLICANT(S) FILE FOR PROTECTION OF THIS VARIETY IN OTHER COUNTRIES? [ ] YES [X] NO *(If "Yes," give name of countries and dates.)*

15b. HAVE RIGHTS BEEN GRANTED THIS VARIETY IN OTHER COUNTRIES? [ ] YES [X] NO *(If "Yes," give name of countries and dates.)*

16. DOES THE APPLICANT(S) AGREE TO THE PUBLICATION OF HIS/HER (THEIR) NAME(S) AND ADDRESS IN THE OFFICIAL JOURNAL? [X] YES [ ] NO

17. The applicant(s) declare(s) that a viable sample of basic seed of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable.

The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in Section 41, and is entitled to protection under the provisions of Section 42 of the Plant Variety Act.

Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

August 1980
(DATE)

Leo L. Schraeder
(SIGNATURE OF APPLICANT)

1

(DATE)

(SIGNATURE OF APPLICANT)

FORM GR-470 (1-78)

INSTRUCTIONS

OCT 29 1980

GENERAL: Send an original copy of the application and exhibits, at least 2,500 viable seeds, and $500 fee ($250 filing fee and $250 examination fee) to U.S. Dept. of Agriculture, Agricultural Marketing Service, Livestock, Poultry, Grain and Seed Division, Plant Variety Protection Office, National Agricultural Library Building, Beltsville, Maryland 20705. (See section 180.175 of the Regulations and Rules of Practice.) Retain one copy for your files. All items on the face of the form are self-explanatory unless noted below.

ITEM

5 Give the date the applicant determined that he had a new variety based on (1) the definition in section 41(a) of the Act and (2) the date a decision was made to increase the seed.

13a Give: (1) the genealogy, including public and commercial varieties, lines, or clones used, and the breeding method; (2) the details of subsequent stages of selection and multiplication; (3) the type and frequency of variants during reproduction and multiplication and state how these variants may be identified and (4) evidence of uniformity and stability.

13b Give a summary statement of the variety's novelty. Clearly state how this novel variety may be distinguished from all other varieties in the same crop. If the new variety most closely resembles one or a group of related varieties: (1) identify these varieties and state all differences objectively; (2) attach statistical data for characters expressed numerically and demonstrate that these differences are significant; and (3) submit, if helpful, seed and plant specimens or photographs of seed and plant comparisons clearly indicating novelty.

13c Fill in the Exhibit C, Objective Description form, for all characteristics for which you have adequate data.

13d Describe any additional characteristics that are not described, or whose description cannot be accurately conveyed in Exhibit C. Use comparative varieties as is necessary to reveal more accurately the description of characteristics that are difficult to describe, such as, plant habit, plant color, disease resistance, etc.

14a If "YES" is specified (seed of this variety be sold by variety name only as a class of certified seed) the applicant may NOT reverse his affirmative decision after the variety has either been sold and so labeled, his decision published, or the certificate has been issued. However, if the applicant specified "NO," he may change his choice. (See section 180.16 of the Regulations and Rules of Practice.)

15a See section 42 of the Plant Variety Protection Act and section 180.7 of the Regulations and Rules of Practice.

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WHEAT

'TUT'

13A Exhibit A

Pedigree: Tut is a selection from certified "Sage" wheat, which came from Fort Hays Experiment Station. Obviously an outcross with some unknown variety.

Tut, appears stable and uniform, through five (5) generations of selfing. Tall off types appear approximately 1:10000.

Three experts, who have examined this wheat, say, that by morphology alone, they can see Sage, Tascosa and Parker as parents.

13B Exhibit B

Novelty Statement: 'Tut', is most similar to 'Sage', but differs, in having resistance to Soil Borne Mosaic.

13C Exhibit C

Attached Notarized proof of above statements, by Dr. Joe Martin.

APPLICATION NO. 8100010

VARIETY NAME Wheat 'Tut'

Test Results Based on the American Association of Cereal Chemists Approved Method (AACC)

1. Straight dough development time ratio:

Farino graph _____

Dough-Mixer _____

2.

Baking Ingredients	Arrival time--minutes	Peak time	Stability--minutes	Curve center height B.U.	Height at end B.U.
Yeast					
No rest					
4 hr. rest					

3. Protein percentage In relation to 'Eagle', 'Tut' has 1.5% more protein. That is, when 'Eagle' runs 11%, 'Tut' runs 12½%, on the average. According to the 1979 report, Information from the Hard Winter Wheat Lab at Manhattan, Kansas, Eagle had 11.6% protein while 'Tut' had 13.6%

9/14/81 as dictated.

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
LIVESTOCK, POULTRY, GRAIN & SEED DIVISION
NATIONAL AGRICULTURAL LIBRARY BUILDING
BELTSVILLE, MARYLAND 20705

FEB 26 1982

TV-24923

Subject: Seed Sample of Protected Variety
Certificate No. 8100010
Kind and Variety - Wheat 'Tut'
Breeder - Leo Linden Schraeder

To: National Seed Storage Laboratory
Fort Collins, CO 80521

Attached is the above-identified sample and an Objective Description of Variety form in accordance with our Memorandum of Understanding and as agreed upon during my visit with Dr. Louis Bass on June 12, 1972.

One copy of this duplicate form showing the result of your germination test on 100 seeds of pure seed of this sample should be returned to this Office. Return of the duplicate form will serve as acknowledgement of receipt of the sample.

Germination: 94 % Date: 4/82

Sincerely,

Bernard M. Leese
Commissioner
Plant Variety Protection Office

Attachment

In duplicate

Dr. Louis W. Bass 6/12/82

163537

FORM APPROVED. OMB NO. 40-R3712

FORM GR-470-6
(2-15-73)

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
GRAIN DIVISION
HYATTSVILLE, MARYLAND 20782

EXHIBIT C
(Wheat)

OBJECTIVE DESCRIPTION OF VARIETY
WHEAT (*TRITICUM SPP.*)

INSTRUCTIONS: *See Reverse.*

NAME OF APPLICANT(S)
Leo Linden Schraeder

ADDRESS *(Street and No. or R.F.D. No., City, State, and ZIP Code)*
R.2-Box 69,
Timken, Kansas 67582

FOR OFFICIAL USE ONLY
PVPO NUMBER 8100010
VARIETY NAME OR TEMPORARY DESIGNATION Tut

Place the appropriate number that describes the varietal character of this variety in the boxes below.
Place a zero in first box (e.g. [0][8][9] or [0][9]) when number is either 99 or less or 9 or less.

1. KIND:
[1] 1 = COMMON 2 = DURUM 3 = EMMER 4 = SPELT 5 = POLISH 6 = POULARD 7 = CLUB

2. TYPE:
[2] 1 = SPRING 2 = WINTER 3 = OTHER *(Specify)* _____
[2] 1 = SOFT 2 = HARD 3 = OTHER *(Specify)* _____
[2] 1 = WHITE 2 = RED 3 = OTHER *(Specify)* _____

3. SEASON - NUMBER OF DAYS FROM EMERGENCE TO:
[2][2][5] FIRST FLOWERING
[2][2][9] LAST FLOWERING

4. MATURITY *(50% Flowering)*:
[0][4] NO. OF DAYS *EARLIER* THAN .....
[0][0] NO. OF DAYS *LATER* THAN .....
[2] 1 = ARTHUR 2 = SCOUT 3 = CHRIS 4 = LEMHI 5 = NUGAINES 6 = LEEDS
[2]

5. PLANT HEIGHT *(From soil level to top of head)*:
[ ][9][8] CM. HIGH
[0][0] CM. TALLER THAN .....
[ ][5] CM. SHORTER THAN .....
[2] 1 = ARTHUR 2 = SCOUT 3 = CHRIS 4 = LEMHI 5 = NUGAINES 6 = LEEDS
[2]

6. PLANT COLOR AT BOOTING *(See reverse)*:
[2] 1 = YELLOW GREEN 2 = GREEN 3 = BLUE GREEN

7. ANTHER COLOR:
[1] 1 = YELLOW 2 = PURPLE

8. STEM:
[1] Anthocyanin: 1 = ABSENT 2 = PRESENT
[2] Waxy bloom: 1 = ABSENT 2 = PRESENT
[1] Hairiness of last internode of rachis: 1 = ABSENT 2 = PRESENT
[1] Internodes: 1 = HOLLOW 2 = SOLID
[ ][4] NO. OF NODES *(Originating from node above ground)*
[2][9] CM. INTERNODE LENGTH BETWEEN FLAG LEAF AND LEAF BELOW

9. AURICLES:
[2] Anthocyanin: 1 = ABSENT 2 = PRESENT
[2] Hairiness: 1 = ABSENT 2 = PRESENT

10. LEAF:
[1] Flag leaf at booting stage: 1 = ERECT 2 = RECURVED 3 = OTHER *(Specify)*: _____
[2] Flag leaf: 1 = NOT TWISTED 2 = TWISTED
[2] Hairs of first leaf sheath: 1 = ABSENT 2 = PRESENT
[2] Waxy bloom of flag leaf sheath: 1 = ABSENT 2 = PRESENT
[1][1] MM. LEAF WIDTH *(First leaf below flag leaf)*
[2][5] CM. LEAF LENGTH *(First leaf below flag leaf)*:

8100010

OCT 29 1980

HEAD:

1 Density: 1 = LAX 2 = DENSE

1 Shape: 1 = TAPERING 2 = STRAP 3 = CLAVATE 4 = OTHER (Specify) _____

4 Awnedness: 1 = AWNLESS 2 = APICALLY AWNLETED 3 = AWNLETED 4 = AWNED

1 Color at maturity: 1 = WHITE 2 = YELLOW 3 = PINK 4 = RED 5 = BROWN 6 = BLACK 7 = OTHER (Specify): _____

09 JB 1/29/81

87 CM. LENGTH

10 MM. WIDTH

12. GLUMES AT MATURITY:

2 Length: 1 = SHORT (CA. 7 mm.) 2 = MEDIUM (CA. 8 mm.) 3 = LONG (CA. 9 mm.)

3 Width: 1 = NARROW (CA. 3 mm.) 2 = MEDIUM (CA. 3.5 mm.) 3 = WIDE (CA. 4 mm.)

4 Shoulder shape: 1 = WANTING 2 = OBLIQUE 3 = ROUNDED 4 = SQUARE 5 = ELEVATED 6 = APICULATE

2 Beak: 1 = OBTUSE 2 = ACUTE 3 = ACUMINATE

13. COLEOPTILE COLOR:

2 JB 9/14/81 1 = WHITE 2 = RED 3 = PURPLE

14. SEEDLING ANTHOCYANIN:

2 1 = ABSENT 2 = PRESENT

15. JUVENILE PLANT GROWTH HABIT:

3 1 = PROSTRATE 2 = SEMI-ERECT 3 = ERECT

16. SEED:

3 Shape: 1 = OVATE 2 = OVAL 3 = ELLIPTICAL

2 Cheek: 1 = ROUNDED 2 = ANGULAR

2 Brush: 1 = SHORT 2 = MEDIUM 3 = LONG

1 Brush: 1 = NOT COLLARED 2 = COLLARED

54 Phenol reaction (See instructions): 1 = IVORY 2 = FAWN 3 = LT. BROWN 4 = BROWN 5 = BLACK SEE EXHIBIT "E"

JB 9/14/81

3 Color: 1 = WHITE 2 = AMBER 3 = RED 4 = PURPLE 5 = OTHER (Specify) _____

06 MM. LENGTH

03 MM. WIDTH

29 GM. PER 1000 SEEDS

17. SEED CREASE:

3 Width: 1 = 60% OR LESS OF KERNEL 'WINOKA' 2 = 80% OR LESS OF KERNEL 'CHRIS' 3 = NEARLY AS WIDE AS KERNEL 'LEMHI'

JB 9/14/81

78 Depth: 1 = 20% OR LESS OF KERNEL 'SCOUT' 2 = 35% OR LESS OF KERNEL 'CHRIS' 3 = 50% OR LESS OF KERNEL 'LEMHI'

18. DISEASE: (0 = Not Tested, 1 = Susceptible, 2 = Resistant)

0 STEM RUST (Races) _____

2 LEAF RUST (Races) UNO 1

0 STRIPE RUST (Races) _____

0 LOOSE SMUT

0 POWDERY MILDEW

0 BUNT

2 OTHER (Specify) Soil Borne Mosaic

19. INSECT: (0 = Not Tested, 1 = Susceptible, 2 = Resistant)

0 SAWFLY

0 APHID (Bydv.)

0 GREEN BUG

0 CEREAL LEAF BEETLE

0 OTHER (Specify) _____

HESSIAN FLY RACES: 0 GP, 0 A, 0 B, 0 C, 0 D, 0 E, 0 F, 0 G

20. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED:

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Plant tillering	Larned	Seed size	Sage
Leaf size	Sage	Seed shape	Sage
Leaf color	Sage	Coleoptile elongation	Sage
Leaf carriage	Larned	Seedling pigmentation	Sage

INSTRUCTIONS

GENERAL: The following publications may be used as a reference aid for the standardization of terms and procedures for completing this form:

(a) L.W. Briggle and L. P. Reitz, 1963, Classification of Triticum Species and Wheat Varieties Grown in the United States, Technical Bulletin 1278, United States Department of Agriculture.

(b) W.E. Walls, 1965, A Standardized Phenol Method for Testing Wheat Seeds for Varietal Purity, contribution No. 28 to the handbook of seed testing prepared by the Association of Official Seed Analysts. (See attachment.)

LEAF COLOR: Nickerson's or any recognized color fan should be used to determine the leaf color of the described variety.

EXHIBIT C

EXHIBIT "C"

KANSAS STATE UNIVERSITY

Fort Hays Branch
Agricultural Experiment Station

8100010

Hays, Kansas 67601
913-625-3425

July 28, 1980

To Whom It May Concern:

This letter is to verify that I have tested a wheat, designated LS-3, supplied to me by Mr. Leo Schrader of Timken, Kansas, for resistance to soilborne wheat mosaic virus. I found it to be as resistant to soilborne wheat mosaic virus as the varieties Newton, Cheney, and Homestead, which are commonly accepted as soilborne wheat mosaic virus resistant varieties. The tests on LS-3 were conducted at a soilborne wheat mosaic testing site near Newton, Kansas in 1977 and again at the Hesston Experiment Field in 1978. The susceptible variety Sage was severely infected in both tests while soilborne wheat mosaic symptoms could not be found in LS-3.

Dr. T. Joe Martin

Dr. T. Joe Martin
Wheat Breeder
Fort Hays Branch Experiment Station
Hays, Kansas

TJM/dfs

Subscribed and Sworn to before me this 28th day of July, 1980.

State of Kansas
County of Ellis

William M Bayden
(Notary Public)

My Commission expires Sept. 18, 1982

8100610

Wheat

'TUT'

13D Exhibit D

Tut Wheat: Tut is a very similar wheat, compared to Sage. It's main difference, is it's resistance to Soil Borne Mosaic.

In trials, on my farm, for the last two years, on non Soil Borne Mosaic infested ground, it yielded 10% more than 'Eagle', in 1979 and 11% more than 'Larned' in 1980.

The test weight from the combine, in 1979, was 64½ lbs., for 'Tut' and 62½ lbs. for 'Eagle', (tested five times)

In 1980, tested three (3) times, 'Tut' averaged 59 lbs., and 'Larned' averaged 56 lbs. Both variaties were grown under identical conditions.

The difference in test weight, was probably due to the fact, that in both years, (1979 & 1980), the 'Eagle' and 'Larned', fired due to drought and hot winds, (up to 105 degrees), a full week before 'Tut'.

There are hairs on the leaves of 'Tut', that appear to be more numerous in some years and are similar to those on Sage. The hairs, are usually less than .5 millimeter long. Position on the leaf varies, also, depending on conditions.

"Normally white to cream coleoptile, and after frost, turns [redacted] reddish" D 9/14/81